

Application Serial No: 10/518,144
Responsive to the Office Action mailed on: September 30, 2008

REMARKS

This Amendment is in response to the Office Action mailed on September 30, 2008. Claims 1, 16 and 18 are amended. Claim 1 is amended and is supported, for example, in the specification at page 9, lines 25-31. Claims 16 and 18 are amended to depend from claim 1. Claim 16 is further amended editorially. No new matter is added. Claims 1-15 are pending with claims 16-28 being withdrawn.

§102 Rejections:

Claims 1 and 4-9 are rejected as being anticipated by Berman (US Patent No. 3,899,333). Claims 1 and 12 are rejected as being anticipated by Ichihara (US Patent No. 5,859,756). Claims 1-9 and 15 are rejected as being anticipated by Okazi (EP 0 924 094). Claims 1, 4, 12 and 15 are rejected as being anticipated by Furuya (WO 00/13178 equivalent to US Patent No. 6,759,137). Claims 1-8 are rejected as being anticipated by Na (US Patent No. 6,576,589). These rejections are traversed.

Claim 1 is directed to an information recording medium that requires, among other features, a recording portion capable of storing information three-dimensionally by irradiation with laser light. Claim 1 also requires that the recording portion includes at least one recording layer, and the recording layer contains titanium oxide. Claim 1 also requires that information is recorded by a change in configuration of the titanium oxide.

Berman does not disclose or suggest these features. In particular, nowhere does Berman disclose or suggest a recording portion capable of storing information three-dimensionally by irradiation with laser light. In contrast, Berman discloses that an irreversible image pattern is formed when a radiation sensitive coating film (containing a binder and titanium dioxide) exposed to light and a chemical redox system come into contact with each other (see column 1, lines 34-39 of Berman). For at least these reasons claim 1 is not disclosed by Berman and should be allowed. Claims 4-9 depend from claim 1 and should be allowed for at least the same reasons.

Ichihara also does not disclose or suggest the features of claim 1. In particular, nowhere does Ichihara disclose or suggest that information is recorded by a change in configuration of the titanium oxide. In contrast, Ichihara discloses a recording material such as GeSbTe particles dispersed in a matrix (TiO₂) such that information is recorded

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by a phase change in the GeSbTe particles (see column 4, lines 9-14 of Ichihara) not by a phase change in a structure of the titanium oxide. For at least these reasons claim 1 is not disclosed by Ichihara and should be allowed. Claim 12 depends from claim 1 and should be allowed for at least the same reasons.

Okazi also does not disclose or suggest the features of claim 1. Okazi is directed to a process for preparing a resin-coated support for image recording with a polyolefin resin layer containing titanium dioxide provided thereon (see paragraph [0001] of Okazi). However, nowhere does Okazi disclose or suggest a recording portion capable of storing information three-dimensionally by irradiation with laser light, as required by claim 1. Also, nowhere does Okazi disclose or suggest that information is recorded by a change in configuration of the titanium oxide, as required by claim 1. For at least these reasons claim 1 is not disclosed by Okazi and should be allowed. Claims 2-9 and 15 depend from claim 1 and should be allowed for at least the same reasons.

Furuya also does not disclose or suggest the features of claim 1. Furuya is directed to an opto-magnetic recording medium that discloses a rutile type oxide (TiO₂) as an example of the material for a recording layer (see column 9, line 25-column 10, line 12 of Furuya). However, nowhere does Furuya disclose or suggest storing information three-dimensionally by irradiation with laser light, as required by claim 1. For at least these reasons claim 1 is not disclosed by Furuya and should be allowed. Claims 4, 12 and 15 depend from claim 1 and should be allowed for at least the same reasons.

Na also does not disclose or suggest the features of claim 1. Na is directed to a method for making anatase type titanium dioxide photocatalyst. However, nowhere does Na disclose or suggest a recording portion capable of storing information three-dimensionally by irradiation with laser light, as required by claim 1. Also, nowhere does Na disclose or suggest that information is recorded by a change in configuration of the titanium oxide, as required by claim 1. For at least these reasons claim 1 is not disclosed by Na and should be allowed. Claims 2-8 depend from claim 1 and should be allowed for at least the same reasons.

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§103 Rejections:

Claims 13 and 14 are rejected as being unpatentable over Okazi in view of Alperovich (US Publication No. 2002/0098446). This rejection is traversed. Claims 13 and 14 depend from claim 1 and should be allowed for at least the same reasons described above. Applicants do not concede the correctness of this rejection.

Double Patenting:

Claims 1-9 and 11-15 are rejected under non-statutory obviousness-type double patenting as being unpatentable over claims 1-19 of Shiono (US Patent No. 7,313,080) in view of Ozaki. This rejection is traversed.

Claims 1-19 of Shiono teach an information recording medium comprising a recording portion capable of recording information three-dimensionally that requires a recording portion comprising at least one particle-containing layer. The particle-containing layer includes particles that absorb at least a part of light with a predetermined wavelength and are substantially transparent to recording light and reproducing light with wavelengths longer than the predetermined wavelength. The particles also have an absorption rate with respect to light with the predetermined wavelength being higher than the absorption rate with respect to the recording light and the reproducing light. The particle-containing layer also includes a particle-holding material that is substantially transparent to the recording light and the reproducing light. Claims 4 and 8 teach that the particle-holding material has an optical constant that changes at a predetermined temperature. Thus, when the temperature of the particle-containing layer increases to reach a predetermined temperature due to the heat generated by the light absorption of the particles, an optical constant of the particle-holding material changes to form information bits. While claim 16 of Shiono teaches that the particles in the particle-containing board may include titanium oxide, nowhere do claims 1-19 of Shiono teach or suggest that information is recorded by a change in configuration of titanium oxide, as required by claim 1. Okazi does not overcome these deficiencies of Shiono. As discussed above, Okazi is directed to a process for preparing a resin-coated support for image recording with a polyolefin resin layer containing titanium dioxide provided thereon (see paragraph

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[0001] of Okazi) and does not teach or suggest that information is recorded by a change in configuration of the titanium oxide, as required by claim 1.

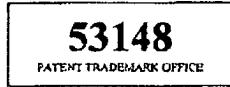
Rejoinder of Claims 16-28:

Withdrawn claims 16 and 18 are currently amended to depend from claim 1. As claim 17 depends from claim 16 and claims 19-28 depend from claim 18, Applicants respectfully request rejoinder of claims 16-28 into the present application. Applicants further note that claims 18-28 should be allowable for at least the same reasons described above as the prior art references do not suggest the features of claim 1.,

Conclusion:

Applicants respectfully assert that claims 1-28 are in condition for allowance. If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, Douglas P. Mueller (Reg. No. 30,300), at (612) 455-3804.

Respectfully submitted,



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